

Walaa Khaled Gad

Associate Professor at the Information Systems Department, Faculty of Computers and Information Sciences, Ain Shams University, Email: walaagad@cis.asu.edu.eg

Education

Ph.D. in Computers and Information Sciences (Information Systems Dept.), May 2010

Dissertation Title: *Text Clustering Based on Semantic Measures*

The work was done jointly between Faculty of Computers and Information Sciences (FCIS), **Ain Shams University, Egypt** and **University of Waterloo** (Pattern and Machine Intelligence (PAMI) Group), **Waterloo, Ontario, Canada.**

M.Sc. Computers and Information Sciences, Ain Shams University, 2005

Thesis Title: Clustering Techniques for Network Planning in The Presence of Obstacles

B.Sc. Computers and Information Sciences, Ain Shams University, 2000

Research

Research Interest:

Data Science, Machine learning, Data mining, Bigdata, Text Analytics, and Information Retrieval

Current Work:

I am working in using machine learning and data mining incredible potential for healthcare services. due to the exponential growth in the number of electronic health records. Previously Doctors and physicians hold patient information in the paper where the data was quite difficult to hold. Digitalization and innovation of new techniques reduce human efforts and make data easily assessable. Moreover, trying to predict the patient cases through their symptoms. We are now working in the area of heart diseases.

I am working on annotating short text documents, without the need to edit the document itself. We employ WordNet and Wikipedia to automatically annotate short text documents with semantic labels extracted from WordNet and Wikipedia.

In addition, I am working on sentiment analysis in social networks that aims to determine the attitude of a speaker or a writer. We aim at detecting and understanding how a social network user is reacting either positively or negatively.

Previous Work:

Post-Doctoral Fellow under supervision of Prof. Tarek Hegazy at the Civil Engineering Department, University of Waterloo (UWaterloo), October 2010- June 2012.

Text Clustering Based on Semantic Measures, 2005-2010

In this work, we designed and implemented Semantic-based model using VC++, Perl, and MATLAB to capture the meaning of the text in a formal structure. We utilized WordNet as an ontology in text clustering. In addition, the proposed model integrated the background knowledge into the process of clustering. In this model, we clustered documents based on single word semantic similarity analysis and

Walaa Khaled Gad

Associate Professor at the Information Systems Department, Faculty of Computers and Information Sciences, Ain Shams University, Email: walaagad@cis.asu.edu.eg

phrase semantic similarity analysis as well. Moreover, we proposed a new Semantic Similarity Histogram based Incremental Document Clustering (SHC). The proposed SHC integrates the semantic relationships between documents to the incremental clustering. The main objective is to maintain high cluster cohesiveness, when a new document is added to the dataset.

The work was done jointly between Faculty of Computer and Information Sciences, Ain Shams University, and Faculty of Electrical and Computer Engineering, University of Waterloo, Canada.

Clustering Techniques for Network Planning in The Presence of Obstacles, 2000 – 2005

In this work, we designed and implemented a network model using VC++ and GIS to choose the best location that houses the public exchanges to minimize the distances that the data need to travel to the closest exchange. We proposed a novel algorithm, The CSPw-CLARANS (Clustering with Weighted shortest Path- CLARANS). This algorithm performs effective clustering by taking obstacles entities and the weighted shortest paths issues into consideration. The CSPw-CLARANS treats the problem of planning in the presence of obstacles as a clustering around medoids problem where the clustering distances represent the weighted shortest path. It takes into the consideration the telecommunication constraints during the clustering to find the best locations for the exchanges. One of the main features of the algorithm is the reduction of the execution time without affecting the clustering quality.

Teaching Experience

Ain Shams University, Faculty of Computers and Information Sciences (2013-current):

Introduction to computer systems, Decision support systems, System analysis and design, Database Systems, Object Oriented Programming, Object Oriented Design Patterns, Data mining.

Ain Shams University, Faculty of Engineering:

Data Mining and Business Intelligence, Engineering computation, Ontologies and semantic web.

Future Academy (Fall 2013, Winter 2014, Fall 2015):

Database management systems, File structures, Introduction to Computers.

Teaching Assistant, Ain shams University, 2000 – 2007

Courses include Data and knowledge Mining, Information Engineering, Software engineering, system analysis and design, Database management systems, Electronics, logic design.

Technical Skills

Languages: C, C++, C# .NET, VB, Assembly, Python, Prolog, HTML
Systems: Unix, Windows, Linux, Android, Blackberry
Tools: GDB, Visual Studio, LATEX editors

Walaa Khaled Gad

Associate Professor at the Information Systems Department, Faculty of Computers and Information Sciences, Ain Shams University, Email: walaagad@cis.asu.edu.eg

Database: MS Access, SQL Server
Software: MS Office, MATLAB

Publications

- Naglaa Fathy, **Walaa Gad**, Nagwa Badr, Mohamed Hashem, "ProGOMap: Automatic Generation of Mappings From Property Graphs to Ontologies", IEEE Access, 2021.
- **Walaa Gad**, Anas Alokla, Waleed Nazih, Mustafa Aref, Abdel-badeeh Salem, "DLBT: Deep Learning-Based Transformer to Generate Pseudo-code from Source Code", Accepted June 2021.
- Aml Mostafa, **Walaa Gad**, Tamer bdelkader, Nagwa Badr, "Pre-HLSA: Predicting home location for Twitter users based on sentimental analysis", Ain Shams Engineering Journal, June 2021.
- Eman M. Aboelela, **Walaa Gad**, Rasha Ismail, "The impact of semantics on aspect level opinion mining", PeerJ Computer Science, June 2021.
- Naglaa Fathy, **Walaa Gad**, Nagwa Badr, Mohamed Hashem, "Querying Heterogeneous Property Graph Data Sources based on a Unified Conceptual View", ICSIE 2020: Proceedings of the 2020 9th International Conference on Software and Information Engineering, ACM, November 2020
- Alhasan Alkuhlani, **Walaa Gad**, Mohamed Roushdy, Abdel-Badeeh M. Salem, "Intelligent Techniques Analysis for Glycosylation Site Prediction", Current Bioinformatics, E-pub Ahead of Print.
- Walaa Alkady, **Walaa Gad**, Khaled Bahnasy, "Swarm Intelligence Optimization for Feature Selection of Biomolecules", 2019 14th International Conference on Computer Engineering and Systems (ICCES), IEEE December 19.
- Eman M Aboelela, **Walaa Gad**, Rasha Ismail, "Feature Extraction Using Semantic Similarity", International Conference on Advanced Intelligent Systems and Informatics, Springer 2019.
- Eman M Bahgat, Sherine Rady, **Walaa Gad**, Ibrahim F Moawad, "Efficient email classification approach based on semantic methods", Ain Shams Engineering Journal Vol. 9, issue 4, 2018.
- Eman Ismail, **Walaa Gad**, Khaled Bahnsy, "Wiki Spots Model for Annotating Short Text Documents Using Wikipedia Hyperlinks", Egyptian Computer Science Journal Vol. 42 No.2 May 2018.
- Dalia Elalfy, **Walaa Gad**, Rasha Ismail, "A hybrid model to predict best answers in question answering communities", Egyptian Informatics Journal, June 2017.

Walaa Khaled Gad

Associate Professor at the Information Systems Department, Faculty of Computers and Information Sciences, Ain Shams University, Email: walaagad@cis.asu.edu.eg

- **Walaa Gad**, "SVM-Kmeans: Support Vector Machine based on Kmeans Clustering for Breast Cancer Diagnosis", International Journal of Computer and Information Technology, 2016.
- Eman Ismail, **Walaa Gad**, "CBER: An Effective Classification Approach Based On Enrichment Representation of Short Text Documents ", **Journal of Intelligent Systems**, 2016.
- Eman Bahgat, Sherine Rady and **Walaa Gad**, "An E-mail Filtering Approach Using Classification Techniques", International Conference on Advanced Intelligent Systems and Informatics 2015
- **Walaa Gad** and Sherine Rady, "Email Filtering based on Supervised Learning and Mutual Information Feature Selection", Computer Engineering & Systems (ICCES), 2015 Tenth International Conference , 2015
- Tamer Abdelkader, Kshirasagar Naik, **Walaa Gad**: "A Game-Theoretic Approach to Supporting Fair Cooperation in Delay Tolerant Networks", VTC Spring 2015: 1-7.
- **Walaa Gad**, Tamer Abdelkader, "A fuzzy-based routing protocol for metropolitan-area mobile adhoc networks," Computer Engineering Conference (ICENCO), 2014 10th International , vol., no., pp.133,138, 29-30 Dec. 2014
- Tarek Hegazy, **Walaa Gad**, "Dynamic System for Prioritizing and Accelerating Inspections to Support Capital Renewal of Buildings ", Journal of Computing in Civil Engineering, 2013
- **Walaa Gad**, Mohamed Kamel, "Incremental Clustering Algorithm Based on Phrase-Semantic Similarity Histogram", International IEEE Conference on Machine Learning and Cybernetics (ICMLC), Germany 2010.
- **Walaa Gad**, Mohamed Kamel," PH-SSBM: Phrase Semantic Similarity based Model for Document Clustering", 2nd IEEE International Symposium on Knowledge Acquisition and Modeling (KAM), China 2009.
- **Walaa Gad**, Mohamed Hashem, Mohamed Kamel, "Semantic Relatedness and Similarity Measures for Document Clustering", 4th International Conference on Intelligent Computing and Information Systems (ICICIS), Egypt 2009.
- **Walaa Gad**, Mohamed Kamel, "New Semantic Similarity Based Model for Text Clustering Using Extended Gloss Overlaps", 6th International Conference on Machine Learning and Data Mining (MLDM), Germany 2009.
- **Walaa Gad**, Mohamed Kamel, "Enhancing Text Clustering Performance Using Semantic Similarity", 12th International Conference on Enterprise Information Systems (ICEIS), Italy 2009.
- L. Fattouh, O. Karam, M. A. El Sharkawy and **Walaa Khaled**. "The Clustering Gain of CSPw-CLARANS for Network Planning in the Presence of Obstacles". Proceeding of International Conference on Computer Science, Software Engineering, e-Business and Applications (CSITeA'04), pp., Egypt, December 27-29, 2004.
- Lamiaa Fattouh, Omar Karam, Mohamed A. El Sharkawy, **Walaa Khaled**, "Clustering for Network Planning", WSEAS Transactions on Computers, Issue 1, Volume 2, ISSN 1109-2750, January 2003.

Walaa Khaled Gad

Associate Professor at the Information Systems Department, Faculty of Computers and Information Sciences, Ain Shams University, Email: walaagad@cis.asu.edu.eg

- Lamiaa Fattouh, Omar Karam, Mohamed A. El Sharkawy, **Walaa Khaled**, “Clustering for Network Planning”, 2nd WSEAS International Conference on Artificial Intelligence, Knowledge Engineering, and Data Bases (AIKED 2003) Crete Island, Greece, August 11-13, 2003, pp 197-202 .
- Omar Karam, Lamiaa Fattouh, Mohamed A. El Sharkawy, **Walaa Khaled**, “Efficient Network Planning Using The cspw-CLARANS Clustering Algorithm”, the 38th Annual Conference on Statistics, Computer Sciences & Operations Research, Cairo, Egypt, December 13-16, 2003, pp 155-171 .
- Omar Karam, Lamiaa Fattouh, Mohamed A. El Sharkawy, **Walaa Khaled**, “CSPw-CLARANS: an Enhanced Clustering Technique for Network Planning Using Minimum Spanning Trees”, International Arab Conference on Information Technology (ACIT 2003), Alexandria, Egypt, December 20-23, 2003.